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woodcut & linoblock printing

Woodcut by Bert Wreford

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INTRODUCTION

For those not familiar with the background and principles of woodcut printing it is necessary at first to explain the technique and basic principles of this art. The whole process is in fact quite simple. A drawing or composition is intially produced, either in black and white or in a number of integrated steps of colour. These are then transferred to a woodblock or blocks in the case of multiple colours being used. The parts of the wood surface which will not print, or those parts that will show white with a one-colour print, are then gouged out deep enough that the ink roller will not come into contact with the gouged areas. The woodblock, upon completion of cutting, is then inked with an ink roller. The printing paper is subsequently placed on the block and either by the use of a press or by burnishing, an impression is transferred onto the paper.

The woodcut print has been a means of artistic expression for many centuries and became predominant during the Middle Ages in Europe for book or manuscript illustration, particularly with the advent of movable type. During this period, its use was an essentially utilitarian one. The creation of a print appears to have gone through many hands: the original composition would be done by the artist and it would then be placed in the hands of a craftsman engraver who cut the design on the woodblock. At this point, it would very often be passed on again to the printer whose sole job was to print it.

A similar procedure was adopted by the Japanese in their development of the woodcut print which started in the 17th century. This work has developed into a singular tradition. The prints are generally made with a large number of colours, and exquisite refinements of line, colour and pattern are found in them. The artist's composition is handed on to the engraver whose craftsmanship enables him to retain every delicacy of drawing in the original work. One is hardly aware of the gouged wood involved in the creation of these prints, except where the pattern of the grain has been judiciously used in a flat-coloured area.

This tradition in Japanese printing has been epitomized by such great artists as Utamaro and Hokusi who both flourished in the 19th century. There are Japanese artists still working in this fashion but many of the contemporary men have been to some degree influenced by western ideas.

The modern woodcut in Europe and America (along with other graphic media), has taken a decidedly different turn of development from the Japanese ideal. It has reasserted itself as a means of personal expression. At the turn of the century such artists as Paul Gauguin and Edvard Munch had successfully explored its possibilities and found that the powerful and dramatic potentialities of evoking shape and form inherent in the woodcut were ideal for a means of conveying their inner feelings and emotions. Thus the woodcut print became an important factor in the modern expressionist movement in the west.

In the early decades of the century, the German expressionist painters used the woodcut extensively. They found

that the black and white woodcut was the ideal medium through which the intensive violence of their feelings could be released. They did, of course, produce some colour woodcuts of great significance.

In the modern, western print, the artist has been more concerned with the possibilities and limitations of the woodcut; its resistance to the gouge and also the implications of the grain. These factors are allowed to affect the creative act. Nearly all contemporary artists cut their own blocks and print them themselves, as this is felt to be all part of the creative experience. In the presence of many of these prints, a viewer is not so aware of the refined craftsmanship that was apparent in the earlier Japanese prints. Conversely, one is more aware of the intrinsic quality of the material involved. There is also more concern for experimentation and individuality.

DEFINITION OF TERMS

It should be pointed out at this time that, although we are basically concerned with woodcut printing, we are dealing with other types of material which, due to the basic principle of cutting out in relief and printing, would all come under the broad terminology of "woodcut". It may well be more logical and less ambiguous if all the different materials involved were put under the general heading of relief printing.

Woodcut of the 15th Century

Woodcut of the 16th Century

Woodcut of the 15th Century

Woodcut by Utamaro

Woodcut by Hokusai

Lino-cut
by Julius Griffith

THE LINO-CUT

One of the main materials used other than wood is battleship linoleum or "lino". Many people regard linoblock printing as rather elementary — something taught in the schoolroom. This prejudice should be dispelled by the many fine works produced by distinguished artists. Some of the fine lino-cuts created by Picasso come to mind. The lino-cut can possess more vitality than many would imagine, especially when the slick newness has worn off the material. Constant inking and cleaning will often harden the material to make it very pleasurable to use and print. Lino that has been previously used as floor covering and compressed variably by footprints can give an interesting texture. Lino also has a perceptible grain, if it is not excessively inked.

Its main characteristic advantage over wood is the freedom with which it may be cut in every direction. It lends itself to great fluidity. Strong, bold shapes with hard edges and great clarity can be easily obtained as well as a rhythmic use of line.

OTHER ALTERNATIVES TO WOOD OR LINO

In Eskimo art, a relief process of printing has recently been developed. Planed surfaces of soapstone have been used as an alternative to the wood or lino surface. This medium has also become very characteristic and singular dūe partly to the Eskimo means of expression and partly to the quality of the cut or scratched stone. There is a feeling of the weight and gravity of the stone which aids in conveying the starkness of the Eskimo environment.

Various other materials can be employed in the relief process. Hardboard can be a very successful material, although it is rather inert. It is quite cheap and plentiful, and therefore useful for the student.

Relief printing can, of course, be done on metal plates, using a similar procedure to the etching technique.

Any etched plate can be printed in relief. However the lines which would usually print black on the white paper would now print white in the black. This is due to the fact that, in etching, the intaglio process of printing is used wherein the ink is forced into the hollows of the lines and the surface is polished, as opposed to the relief method where the ink is simply placed on the surface. (See Youth and Recreation Branch craft booklet on intaglio printing.)

This then covers the main materials other than wood which can be printed by the relief process. There are other experimental devices and materials that can be used, such as collage, but that will be dealt with later.

Etching Printed in Relief

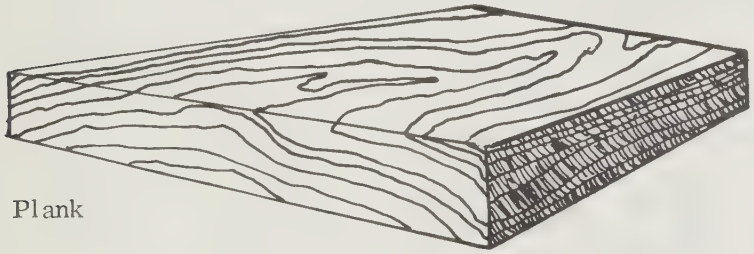
by K. Weber

Etched Print

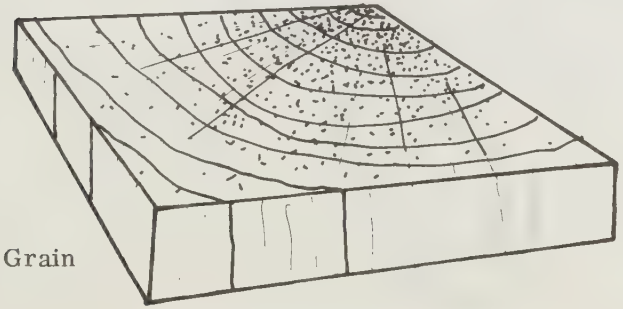
WOOD ENGRAVING

In earlier woodcut printing, and perhaps to some extent today, the wood used has been an end grain block, as distinct from the plank or plywood sheets used to a large degree in contemporary woodcut work. It should be pointed out that the Japanese woodcut has always been done on planks.

The definition of end grain is, simply, that the block has been cut across the trunk of the tree (a cross section block or slab); in other words, the direction of the grain is at right angles to the surface of the block as opposed to the plank where the grain is parallel with the surface.



Plank



End Grain

The surface of the end grain block is very smoothly finished. Its main characteristic is that there is no directional grain to be concerned with, as the grain runs straight up through the surface. It is therefore possible to engrave lines in any direction on the block without any variation in cutting quality.

The method known as wood engraving always makes use of the end grain block. In this, engraving tools are used rather than the gouges used in working on the plank. The graver or burin consists of a steel rod of lozenge-shaped section with an oblique cut at the end, finishing in a sharp point. The handle of the tool is held against the palm or fourth finger, and the graver is pushed before the hand, directed by the thumb held near the point of the blade.

There are other varieties of graver used such as the tint tool, so called because it is employed in making a series of delicate lines to produce a tone or tint. This tool is nearly triangular in section with an acute angle.

There is also the spit-sticker used for curved lines; the scorper or scauper and the threading or multiple tool used for doing multiple lines.

With engraving, fine delicate lines are engraved; grays or tones are simulated by doing a series of lines quite close to one another. All manner of textures can be simulated and incorporated into the composition by using various cutting techniques. The effect will be decidedly different from the broader gouging methods. It is a more laborious, disciplined way of working and is not suited to every temperament. All wood engravings tend to be rather

small. In the first place, there is a limited amount of timber of wide enough diameter to allow for the cutting of large end grain blocks. Besides, engraving the whole area of a very large block is extremely laborious.

Even so, engraving was the main method of woodcut printing during earlier times in Europe. It resulted in the works of fine craftsmanship and draftsmanship, still to be seen in some of the manuscripts and books now in museums and collections. It should also be added that many fine wood engravings are still being produced by some artists.

The Wood Graver

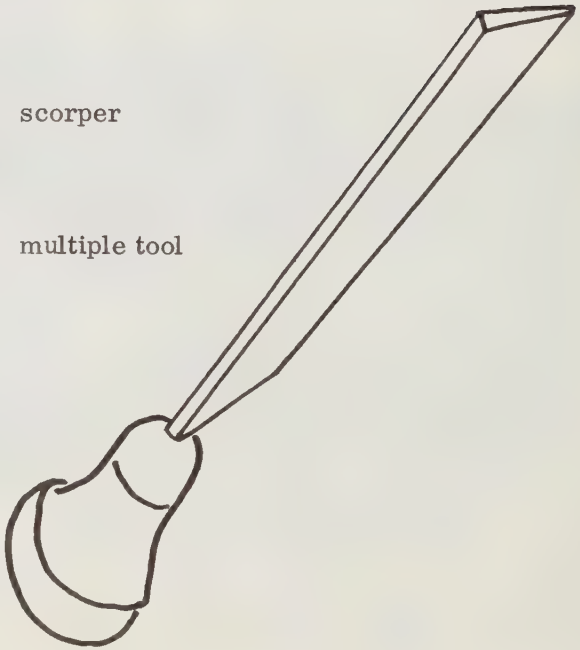
Varieties of Gravers

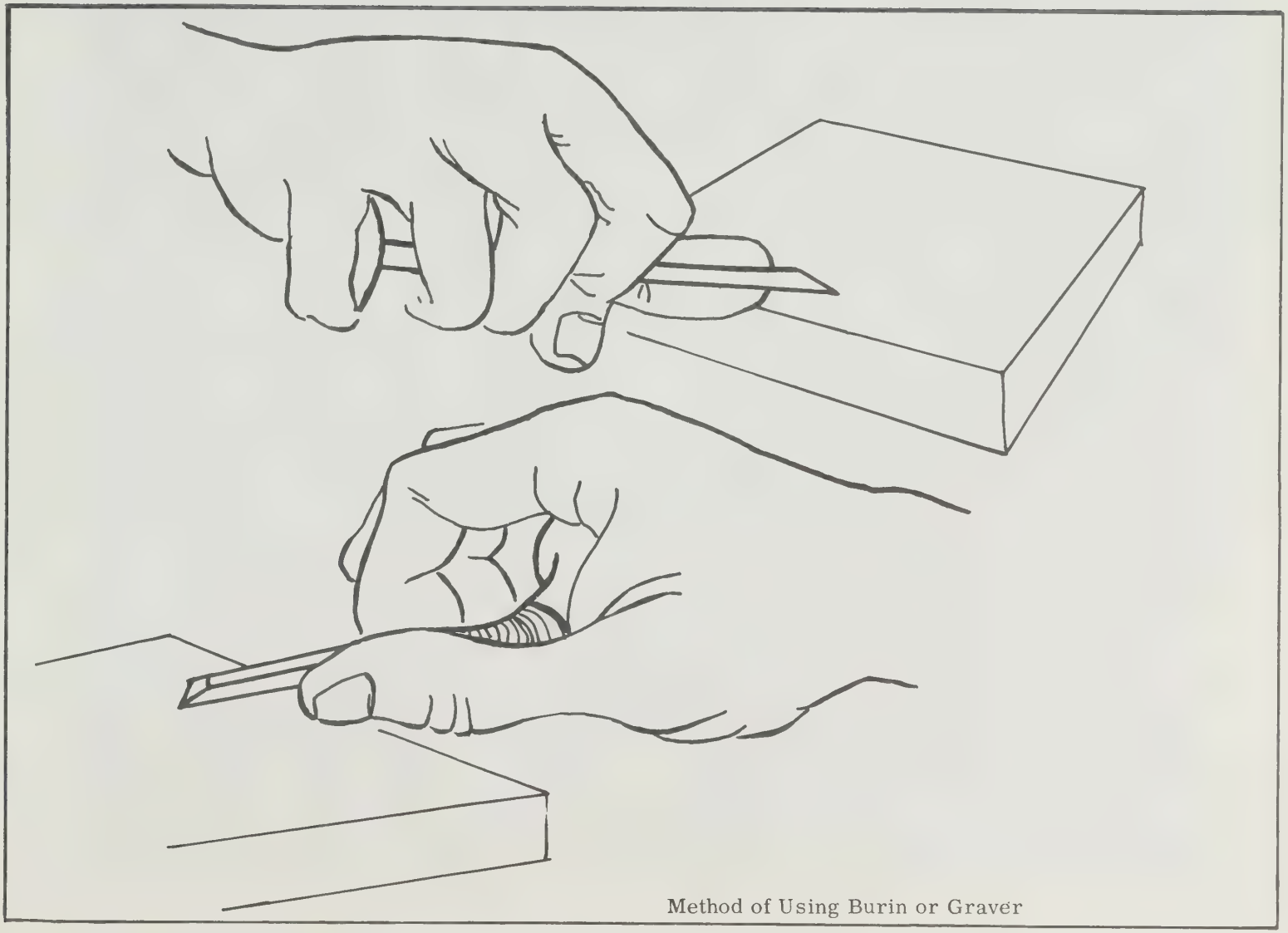
tint tool

spit-sticker

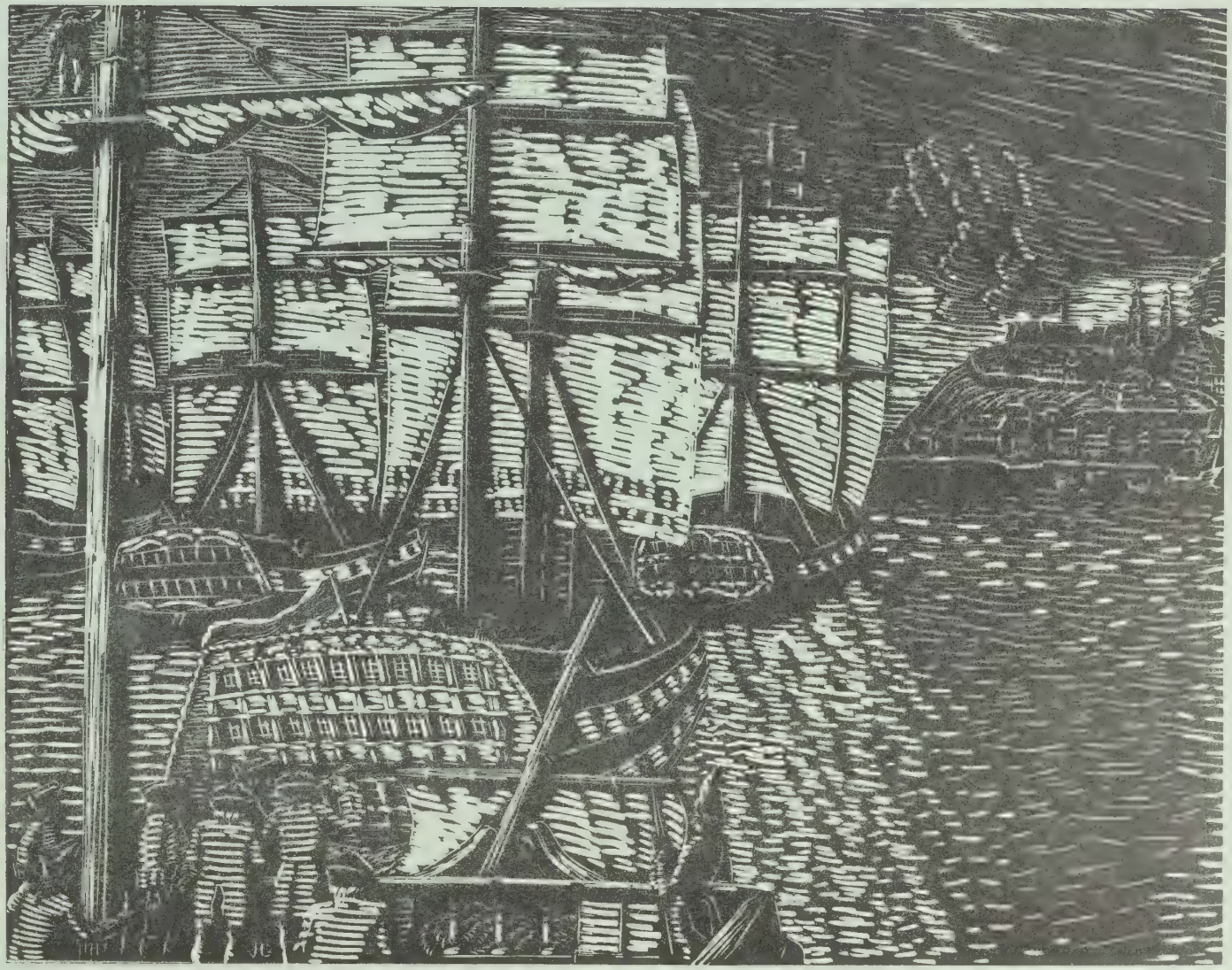
scorper

multiple tool





Method of Using Burin or Graver



Woodcut by Julius Griffith

PLANK AND PLYWOOD

In most contemporary woodcut printing in Europe and America the plank is being used. All the Japanese woodcuts were made from a certain kind of cherry planks. Apparently, it worked particularly well for their method of using watercolour inks. Other woods tend to absorb too much water, which swells the grain and raises the surface in irregular ridges.

By the way this effect of heavy ridges in wood texture may be desirable in certain instances. A ridged plank might be used for a light colour subsidiary to other colour blocks in a two or three-colour print. Soaking in water and scrubbing may be used to raise the grain of wood deliberately. Some nitric acid may be used in the water to speed up the effect. The principle involved here is to reduce the soft surfaces between the harder ridges.

Similar effects can be obtained by using an old, weathered or cracked board. This can be very effective at times, particularly when the print made with the old board has a strong graphic impression printed over it. One can combine the old, weathered piece of wood with a finely engraved wood block, the first is for the natural texture, and the other is for its graphic quality. (If an old, rotten board is to be used, it is essential that it be well-cleaned with a wire brush or steel wool.)

We usually think of wood in two categories: hardwood and softwood. The hardwoods are from the deciduous trees bearing broad, flat leaves, shed annually. The softwoods come from the coniferous trees such as pine and fir.

"Hardwood" and "softwood" can be misleading terms, as some of the softwoods prove to be much harder than the softer species of hardwoods.

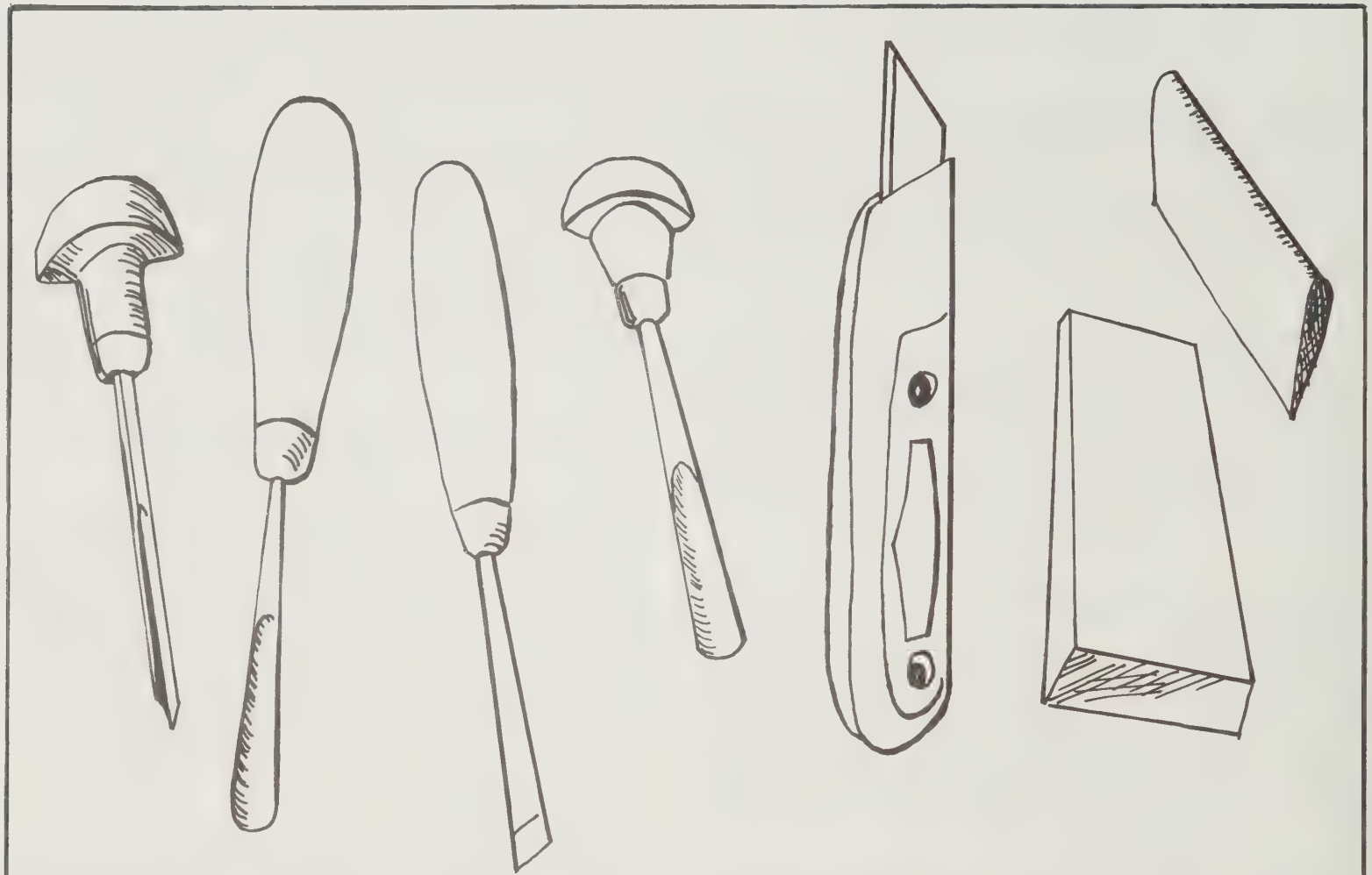
The softwoods most highly regarded for woodworking are: white, yellow and parana pine. These have an exceptionally even texture and are considered first class.

Of the hardwoods, such species as lime, maple, beech, sycamore, bass, poplar and all fruit woods are highly recommended. There is no reason why any likely wood cannot be experimented with, as they all have some unique qualities.

The Japanese prefer such woods as Siebold's beech, katsura, lanan, silver magnolia and basswood.

Many of the good quality wood planks can be both small and quite expensive. Many artists find the plywoods very effective. They are quite reasonable and can be bought in large sheets. The veneers on them come in nearly all the preferred species of wood so that the surface quality is much the same as that of the planks. The big advantage is that large woodcuts can be made from plywood with relatively little expenditure of money. Many modern Japanese artists are using plywoods veneered with their preferred types of wood.

In conclusion, mention should be made of the wood block itself as an objet d'art as well as a means of making prints. In many black-and-white woodcuts, the blocks themselves have proved so potent and rich, they have been preferred to the print by collectors.



Knives and gouges including matt-knife, also sharpening stone and slip stone

WORKING TOOLS AND THEIR HANDLING

Once we have established the material upon which the artist is to work, the next thing to discuss is the tools. For planks, plywood, or lino, knives and gouges are the tools to be used, not the gravers used for wood engraving.

The purchase of good quality tools is the best policy. Cheap ones are seldom satisfactory. A number of useful gouges and knives made of good durable steel are being manufactured. It is often best to buy individual tools rather than sets. If you buy a set when you are a beginner, you sometimes find that you have tools that you never use.

For much of your cutting you should have at least two gouges ranging in width from 1/8" to 5/16"; also, a knife and a V-tool. Naturally, the assortment will be subject to personal preference. Also, it is best to have sufficient tools to allow for breakages occasionally.

HANDLING THE TOOLS

The hand holding the gouge drives the tool along in the wood. The fingers of the other hand should be used near the end of the blade to steady and guide it. The same procedure holds for the V-tool. Care should be taken with this tool to see that it does not jump; this is where sharpness becomes an important factor.

The knife is used in an almost upright position. One hand firmly grasps the handle and the other holds the blade near the end. The point is inserted on the line and the hands pull the knife towards the body, guiding the blade along the line to be cut. The knife can be very useful for a very narrow line. Two cuts can be used to cut out a slender wedge, although even the one cut will register as a white line on the print. Sometimes, in cutting across the grain on softwood, it is necessary to use the knife first along an edge before cleaning out with the gouge; this may avoid tearing or crushing the wood.

Texture can be created at times by freely slicing the surface with short, shallow strokes of the knife, and a similar method can be used with the V-tool. Many other textures can be obtained with various tools or techniques: hammering in nail points, nail heads, or wire mesh are examples of this kind of variation. Even bruising the wood with the hammer itself may bring a desirable effect.

One of the heavier matting knives is also necessary, and it will be needed later to cut the matt-board for some of your prints.

SHARPENING TOOLS

A number of stones will be required for the sharpening of the tools, as well as a tin of machine oil for the lubrication of the stones.

The sharpening of tools becomes a very important aspect of woodcut printing. Good cutting and gouging demands highly sharpened tools kept in constant trim by the stone.

Gouges and knives are sharpened on either axolite or

carborundum stone, and are finished on Arkansas or Washita for greater keenness. Finally, the tool can be stropped on a piece of soft leather that has been rubbed over with razor strop paste obtainable from many tool or cutlery stores.

Frequently check the tools during use and resharpen the moment any dullness is felt with the edge of the finger.

Sharpening the hollow gouges will take a little practice. Care should be taken to maintain a constant angle of the gouge to the stone. The gouge should then be rotated rhythmically from side to side so that every part of the edge receives attention. Remember that the stone should receive a liberal dose of machine oil while being used.

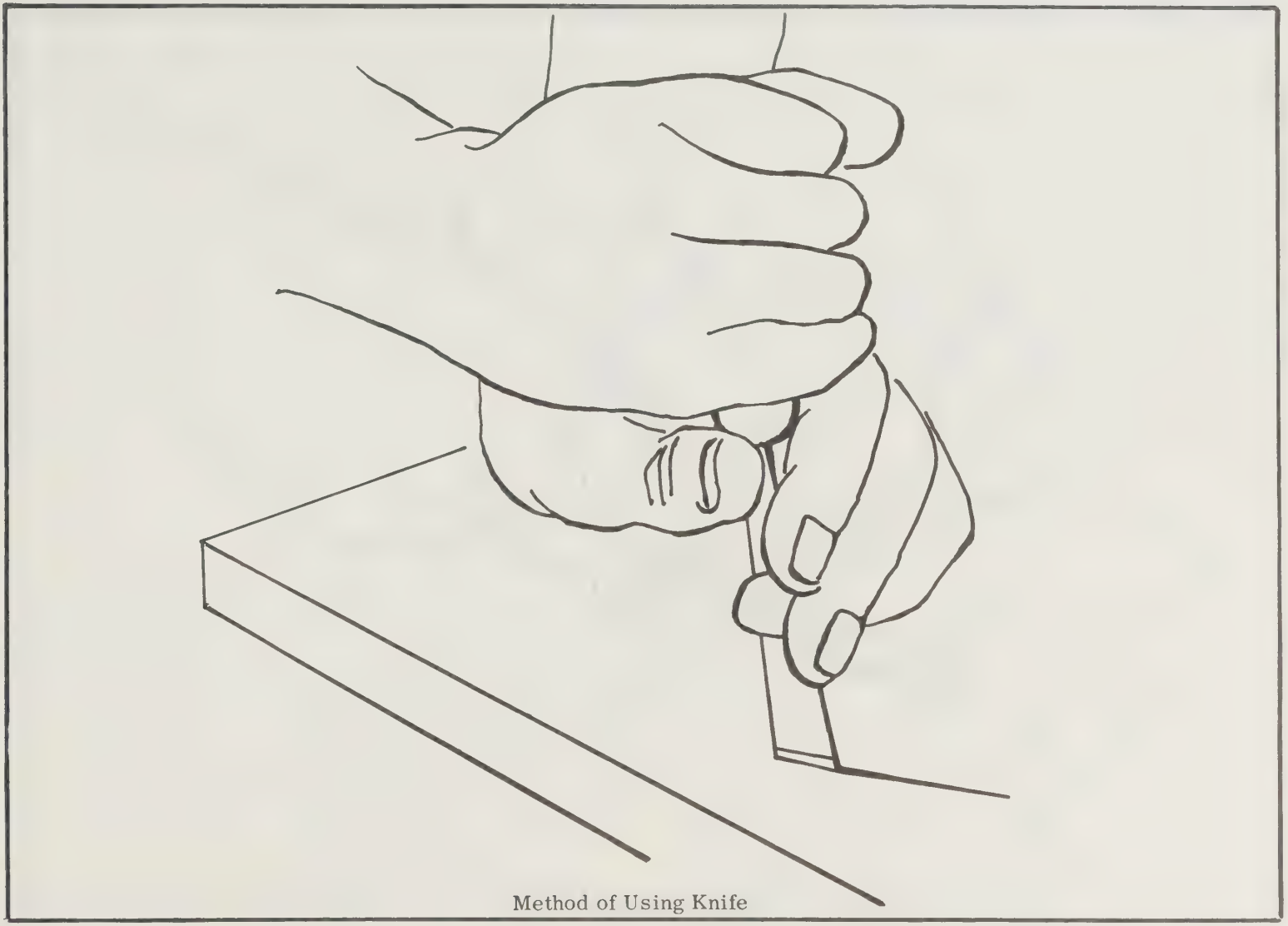
A slip stone is used to sharpen the inside of the gouge. This is a small wedge-shaped stone with one side sharp for the V-tool and the other rounded for the gouges. This stone is placed against the inside edge of the gouge and is passed along the edge of the blade from side to side with a slight up and down movement. This is to remove the burr created by honing the outside edge of the blade.

The V-tool must be sharpened on both sides. The bevel must be held flat against the stone and moved to and fro. The meeting of the two sides is ground in the same way that you would work a fine hollow gouge. The point is very important and must be sharpened with care. Failure to do this will result in the V-tool tearing the wood when used across the grain. It will also cause slipping when used on lino.

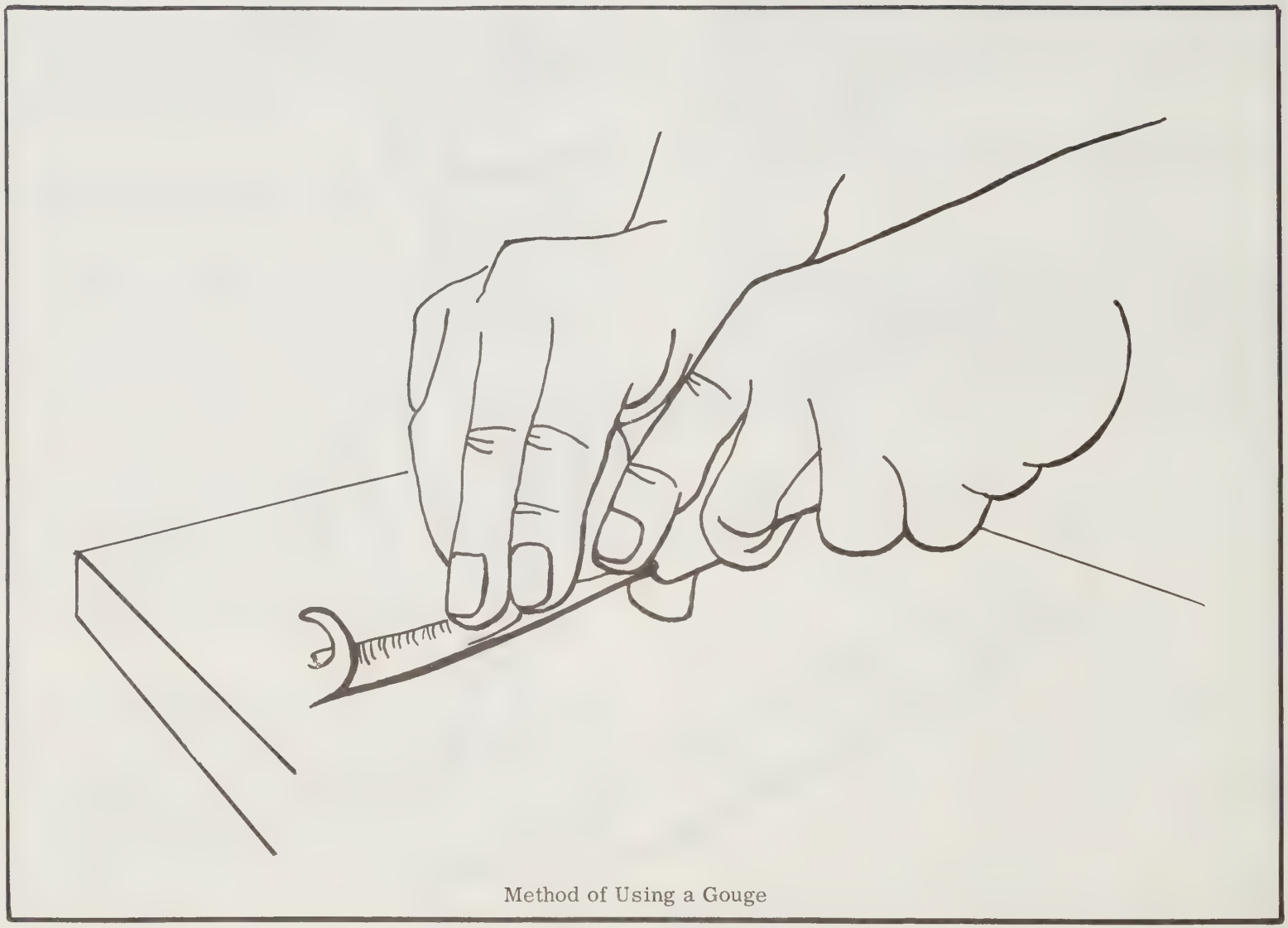
It is possible to sharpen larger gouges by holding the gouge stationary and by grasping the stone with the other hand and rubbing it around the blade. The right bevel should be carefully maintained.

Both sides of the knife should be sharpened; the bevel should simply be held against the stone and worked to and fro.

When the gouge has been repeatedly sharpened, the edge may become worn and irregular. At this point, one should have the tool reground on the grindstone. The gouge should be held at right angles to the flat of the grindstone, if only the edge is to be ground, and at the necessary angle, if the whole bevel is to be ground.

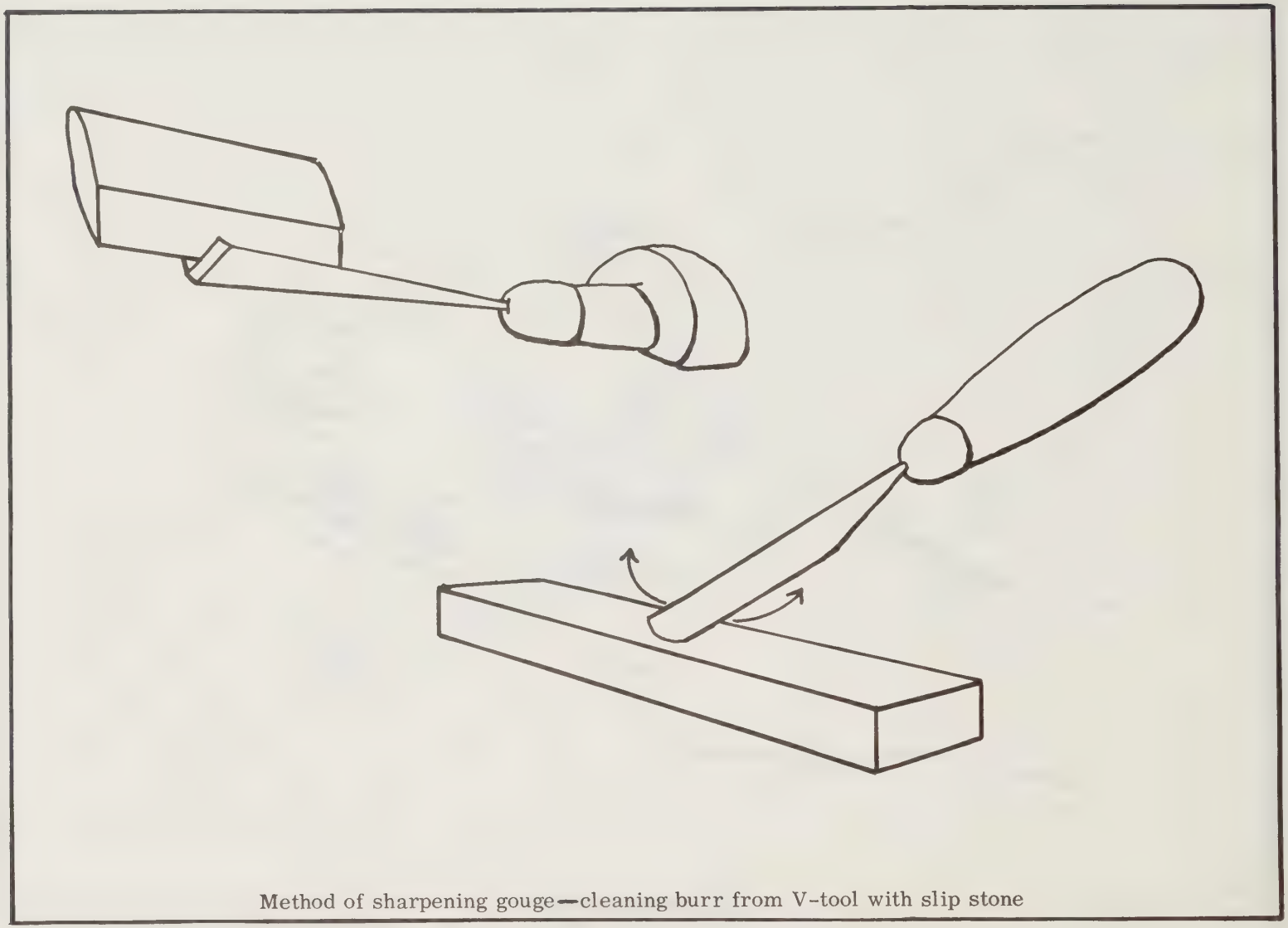


Method of Using Knife



Method of Using a Gouge

Sharpening a Gouge



Method of sharpening gouge—cleaning burr from V-tool with slip stone

OTHER TOOLS

An important item in the workshop will be a number of good saws. If a machine-saw can be procured, it facilitates rapid cutting of blocks, particularly when there is a group of students involved.

Sandpaper or an electric sander will be essential for sanding down rough areas and burrs created by the gouge. It may also be useful for creating slight variations on the printing surface such as textures and tonal areas.

With small woodcuts a stop-block may be found necessary to stop slipping. This can be made with a small piece of board to which is attached at one end, on the underside, a piece of wood to lock the board to the table. On the other end, on the top, is attached another piece of wood which will act as a stop for the woodcut itself.

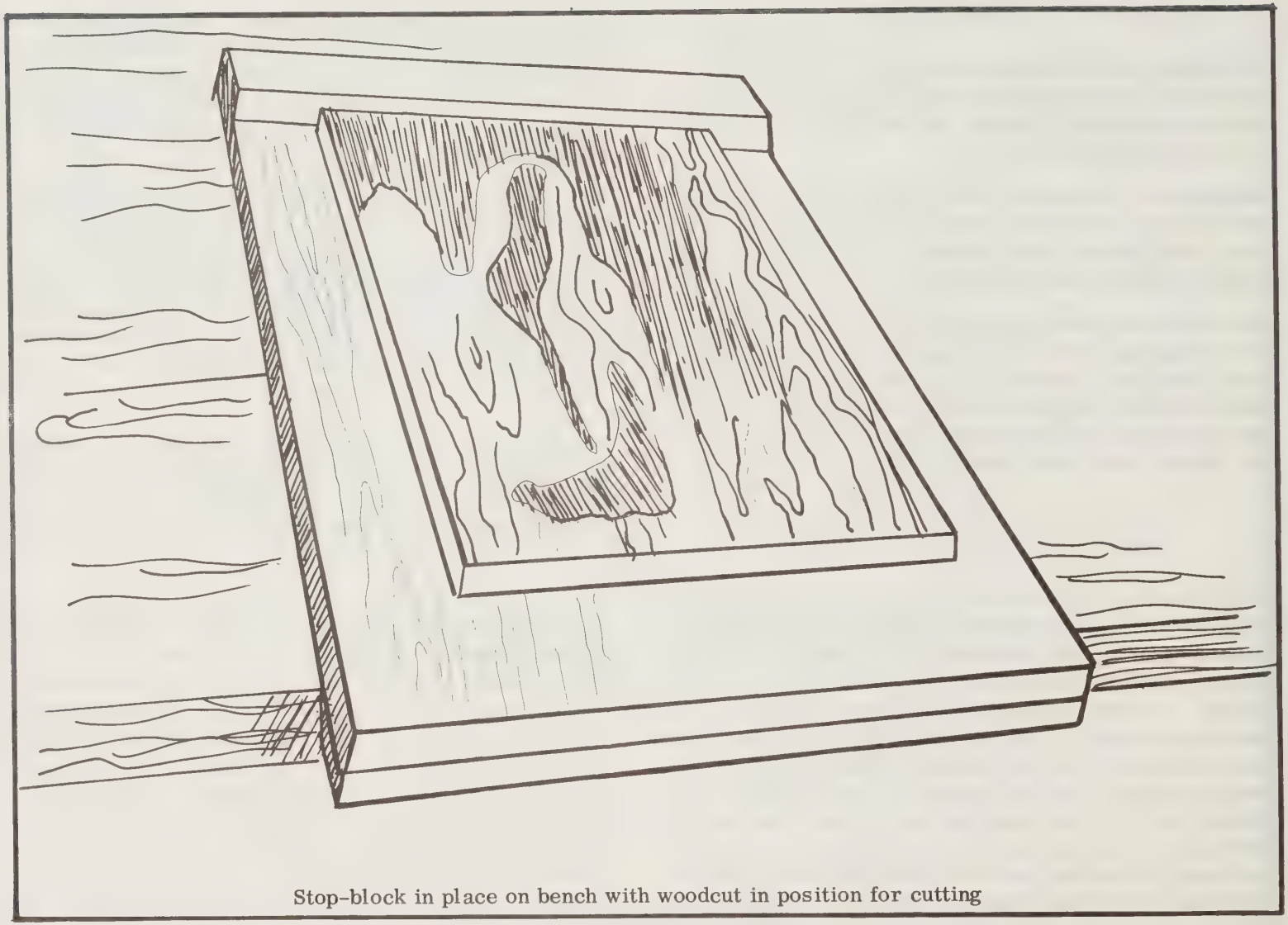
PRINTING TOOLS AND MATERIALS

Hand-bravers or rollers for rolling out the ink should be carefully selected and should be of good quality. Many of the cheaper variety are rather inadequate; they do not roll smoothly and easily and they generally develop hollows. A good functional handle with a straight, strong core which freely rotates are the things to look for. There should also be lugs on the handle on which the brayer stands when not in use. This is in order that the roller itself remain free of the surface when not in use. Thus, no flat spots occur on the roller. These hand-brayers can be purchased with either rubber or gelatine rollers, both of which have individual characteristics. The gelatine rollers are softer and more pliable than the rubber ones. This enables the former to sink down into the depressions and pick up the high spots in the cut-out areas which tend to print and create some significant and rich textures in the white parts of the print. When controlled this can be very advantageous.

This advantage is partially lost when ink is applied with an inflexible rubber roller. On the other hand, a hard roller will have the advantage when it is desirable that the wood block be kept clean in the white areas, or when the block itself is to be kept as an art object and exhibited. Where large areas have been cut away and there is limited support for the roller, the gelatine roller will tend to deposit a lot of ink in the cut-out areas.

Another factor is the durability of the rollers. Gelatine is susceptible to change at high temperatures and in extreme heat will melt away entirely. For instance rollers placed in the back windows of automobiles on hot days have been known to do this.

The choice of suitable printing inks is important. Oil paints can be used, but they have been found to be unsatisfactory in some respects. One problem encountered is the spreading of the oil into the paper, causing unpleasant stains around the printed areas. Litho or offset inks of good quality are usually satisfactory. These inks consist of pigments ground in some varnish with the addition of polyethylene wax and a minute amount of cobalt drier. There is a good selection of colours in addition to black. Transparent white ink is a useful item for tinting other colours and giving transparency. Some of the artists' suppliers also produce tubes of blockprinting inks. Some



Stop-block in place on bench with woodcut in position for cutting

of these brands are water-soluble and quite useful. Whatever type of ink used, if you do a large amount of printing, it is best to get fairly large quantities from the ink manufacturer. It is possible to get a list of permanent colours from him; some of the colours used commercially are not very permanent and should be avoided.

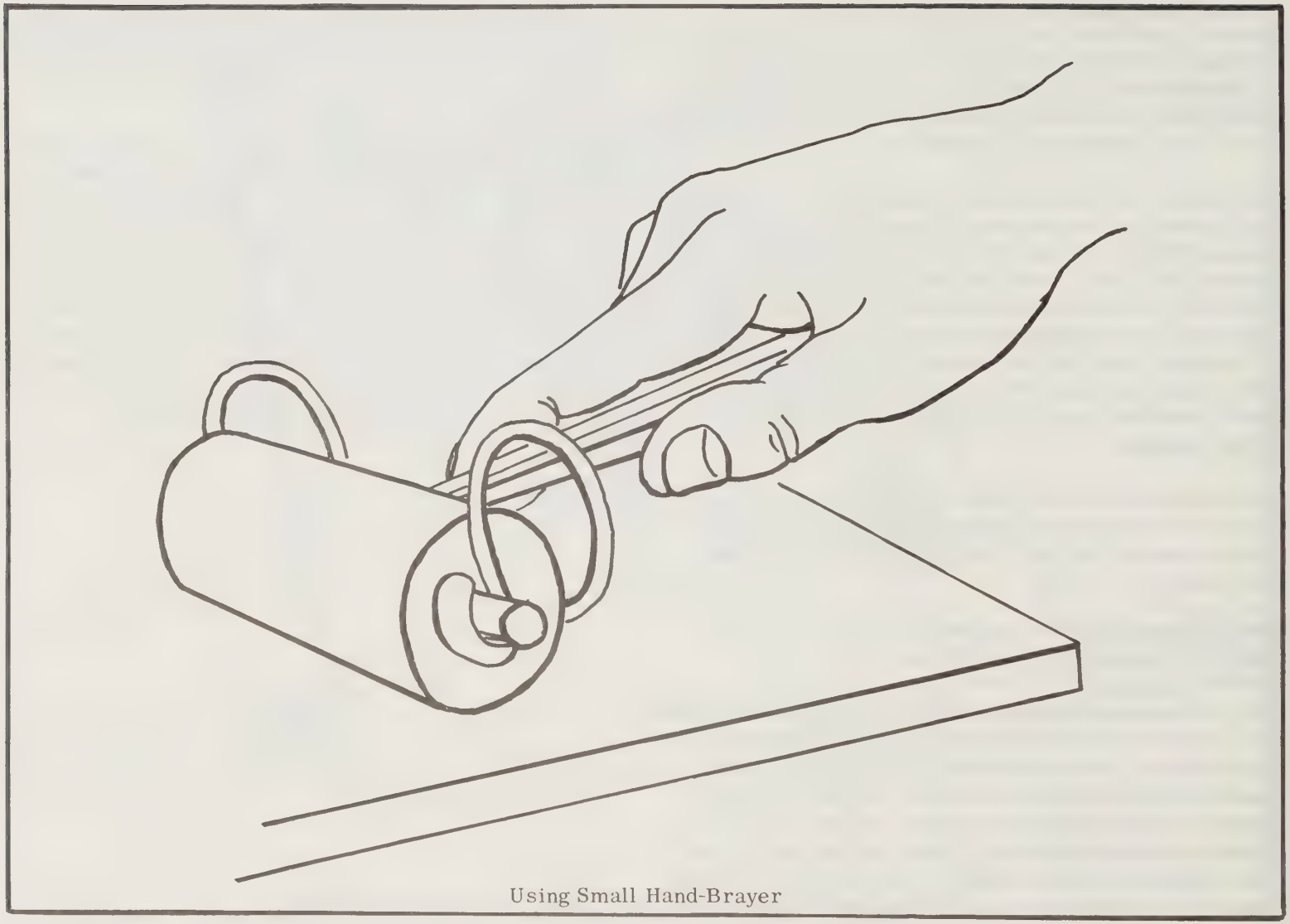
Paper is our next consideration. Rice paper is one of the best types of paper to use, also mulberry or any of the vegetable fibre varieties. They have a silky smoothness and are very absorbent because of their porosity. Sometimes the rice paper obtained from a Chinatown store can be very interesting to use. It is not so refined as the paper from the large manufacturers. One finds little specks and lumps of rice in the paper but these so-called blemishes can often be an attraction and add a certain richness.

Cartridge paper is very good and, in fact, so is any paper that has not been heavily sized. Coated stock is lacking in character and of very little use, as it has little absorbency.

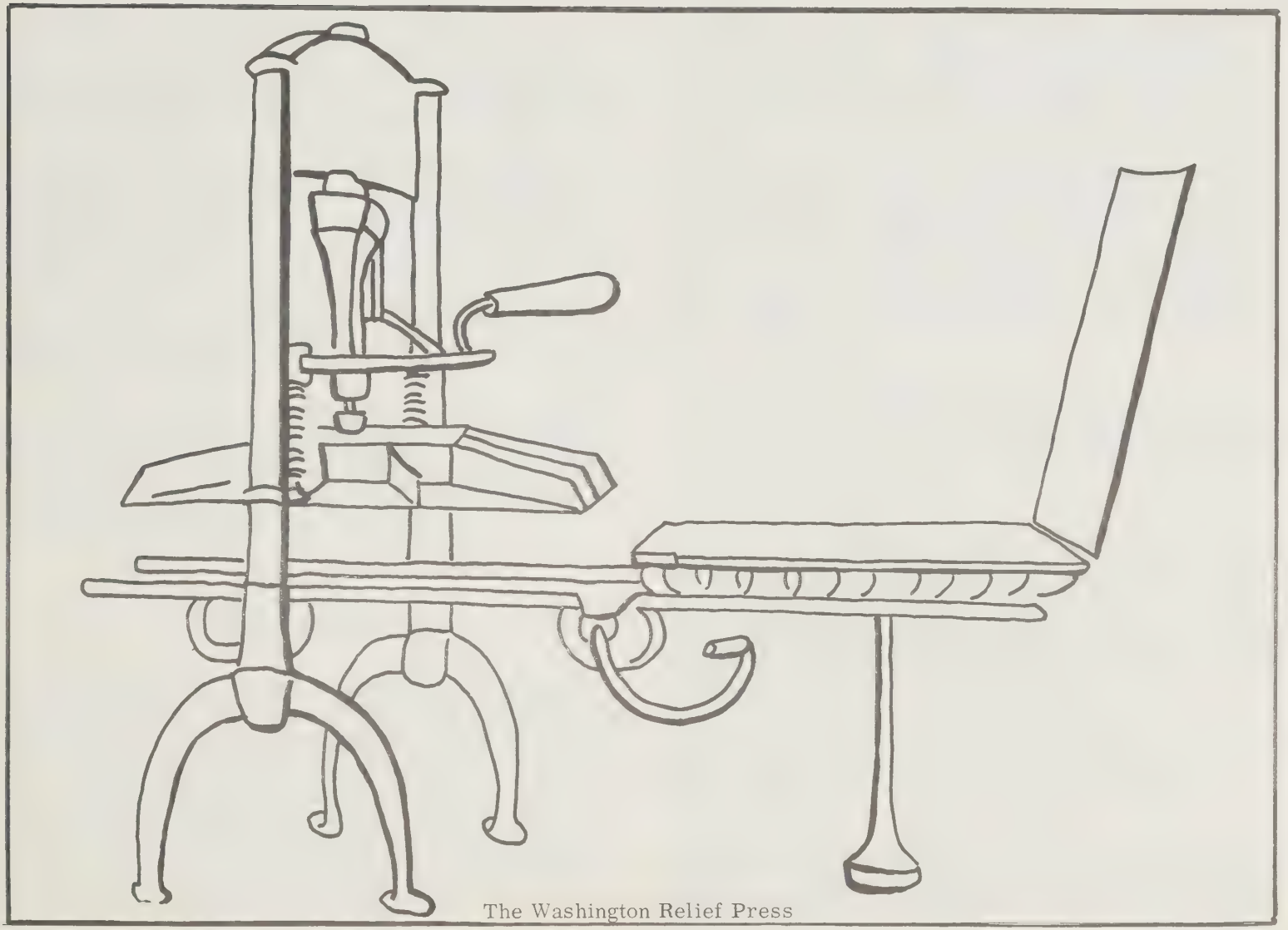
Some of the rag papers are good as long as they are reasonably smooth in texture and not heavily sized.

With the heavier papers, it is often a good idea to dampen them before printing as they become more receptive to the ink when damp. Put a few sheets of newspaper on a non-absorbent surface such as a piece of glass or plastic. Sponge over the newspaper with water and then lay a sheet of your printing paper on top. On top of this, place a few more sheets of newsprint, dampen these also and add your next piece of printing paper. Carry this procedure on until you have covered all the printing paper that you will need. You can place another piece of glass on top and leave for a short period during which time all the papers will become evenly and moderately damp.

After the damp paper has been printed, by reversing the procedure, the prints can be dried without cockling. Simply place the damp prints between dry sheets of newsprint. This procedure is hardly necessary with rice paper. One final point: when printing damp paper by hand with a burnisher, rather than in the press, the rubbing should be completed before the paper dries out. Otherwise it may shrink and cause a double image. There is the same problem with multiple colour printing. For each colour the paper must have the same degree of dampness, and be the same size, or it will not register correctly.



Using Small Hand-Brayer



The Washington Relief Press

THE PRESS

The use of a printing press saves much laborious hand rubbing, particularly when many colours are being printed.

The presses used in many woodcut printers' shops are old hand-presses now obsolete for commercial purposes. Washington presses range in size right up to presses with beds of about 40" x 28". Such a large size is ideal if you can find one anywhere, and if your studio is large enough to house it. The old presses in the large sizes are extremely heavy and might require wooden spreaders placed under the feet crosswise to the joists under the flooring.

In England, there are similar presses called Albion presses. It is important that the largest one available should be sought, as all printing problems become easier to solve with a large press, particularly where there are a number of students involved.

PRINTING METHOD

The procedure for printing is as follows: place the inked block on the bed of the press and on top place the damp paper (some packing may be required to adjust the pressure). The tympan—a frame hinged to the bed and covered with fabric—is then lowered and by means of a large handle the bed is run under the platen. A large lever can then be pulled and this in turn activates a wedge inserted above the platen. This wedge becomes upright and forces the platen down on the print with great force.

In the event that the printing is uneven, it is sometimes advantageous to insert a felt pad either under the block or over the print. This ensures complete overall pressure, particularly in making a very large print.

When a good press is not available, it is possible to make a simple appliance that does a good job and is less laborious than the hand rubbing method. Simply construct a wooden box about 12 inches square. Place two handles at each side and two casters underneath so that in effect you have a small cart. Underneath on the front edge fix a wooden piece over which some leatherette can be nailed.

The procedure is as follows:
Lay inked block on floor or low bench, perhaps with some stops to prevent movement. Lay damp paper on top; over this place a piece of red pressboard over which some soft grease has been spread.

The little cart is filled with bricks or other weights and wheeled to the block. It is then tipped so that it is resting with the leather-covered wooden piece on top of the greased pressboard. It is then simply a matter of sliding the appliance over the block ensuring that every part gets thoroughly worked over.

With this method, and in hand rubbing, it is often necessary to roll back the print and re-ink the block for further rubbing until the print is solidly printed.

For hand rubbing, a good sized steel spoon or a smooth glass tumbler can be used as tools. Rub quite vigorously directly on top of the damp paper. If the paper is rather

fragile, a protective piece of heavy paper can be used on top of the print.

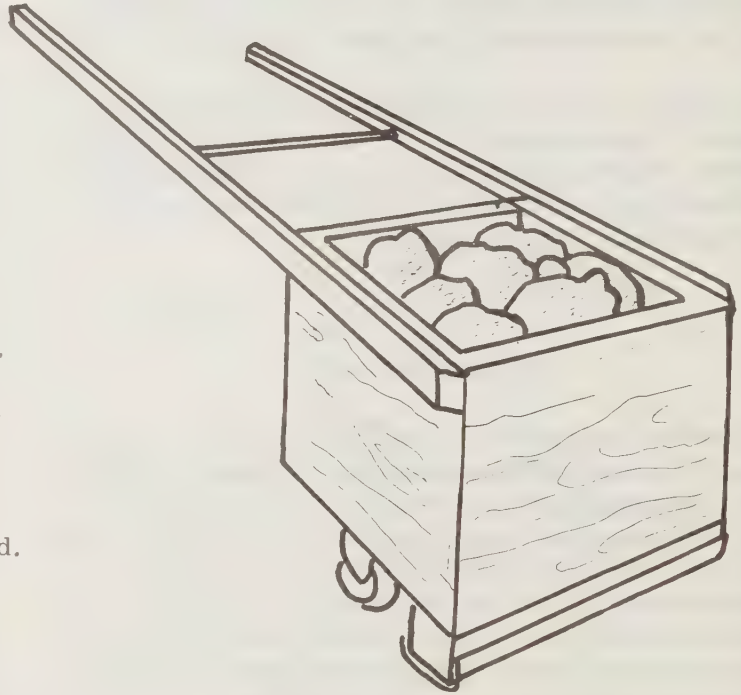
It is possible to make an implement like the Japanese barin for rubbing purposes. Take a disk of wood or some material that can be slightly shaped into a convex disk. Place a slightly larger circle of leatherette over the curved side of the disk, the edge slashed so that the strips will glue down smoothly at the back. Leave some strips on opposite sides of the disk longer so that they can be bound into a handle. The Japanese use bamboo leaves for this purpose.

A large slab of heavy glass or marble will be needed for rolling out the ink. Some old lithograph stones are ideally suited for this purpose.

With the palette knife, deposit the ink that you intend to use on the side of the slab and then take a small amount of the ink and spread it across the surface. Take the hand-brayer and roll out the ink vigorously until there is an even, smooth layer of ink on the slab and on the roller. Maintain contact with the slab on the forward movement and lift the roller on the backward movement. This procedure should also be followed as one applies the inked roller to the wood block. If contact is maintained during the backward movement, there is a tendency to pick up on the backward stroke what was deposited on the forward.

Many beginners make the mistake of over-inking. Make sure that the ink has been rolled out to a thin, even layer before applying it to the wood block. This procedure will become much easier with experience. When inking the fresh unprinted wood block, it will be found that the block will take a considerable amount of ink. The first print may be a little under-inked, but this will improve with the second and third prints. If the ink is a little too stiff and viscous, special ink varnishes can be used to thin it.

It should hardly need mentioning that once printing operations have been completed, the slab and hand-brayer should be thoroughly cleaned with varsol, or water if water-solvent inks are used.



A simple printing appliance

SUMMARY OF EQUIPMENT

The following is a summary of equipment that the student will require to carry out woodcut or linoblock printing:

1. A good workshop with strong benches and a large sink, preferably with hot and cold running water. Also, some sort of rack or line with clips attached on which to hang wet prints; an attachment with rows of clothes-pegs may be useful here.

2. Saws and general carpentry tools; a hand-saw can be very useful for cutting shaped pieces of wood, besides the general cutting of blocks.

3. A supply of planks or plywood of the suitable kinds of wood and a quantity of battleship lino.

4. Abrasives such as sandpaper, steel wool, etc. An electric sander is a good item to have, if possible.

5. Pencils, watercolour brushes and India or Chinese ink to carry out designs and compositions preparatory to cutting blocks.

6. Drawing and tracing paper; also, printing papers and matt-board.

An assortment of knives, gouges and heavy matt-knife.

8. Two six-inch hand-brayers, one rubber and one gelatine, and perhaps two smaller brayers for inking small areas of a design.

9. Printing inks (in tubes or tins).

10. A large press, if it is possible to procure one, or the special box appliance if large prints are being done.

11. Palette knives

12. Burnishing tools such as spoons, tumblers or barins.

13. A number of sharpening stones, a tin of machine oil.

14. A large slab of marble or glass for rolling up ink.

15. A heavy steel ruler for cutting mats.

16. Cleaning material such as rags, paper towels, varsol and a large covered garbage can.

VARIOUS ASPECTS OF CREATIVITY

In creating a woodcut print, the artist is not simply reproducing a drawing or painting by a printing process. It is necessary to think in terms of the engraved wooden surface and the resulting organization of shape and line. The limitations and confines of this medium are things that give it its greatest significance. It demands an approach of discipline and yet one of inventiveness and improvisation. The whole process of creating the visual idea is one of relating the theme to the material involved so that experience is the vital factor towards the creation of a characterful and personal print.

The thing to be understood in evolving a composition in relief design — let us say in black and white — is to be aware of positive and negative integrated shapes. There is a potential for either the black or the white shapes to assert a dominant and positive role as they interact with one another.

Another significant force is the white engraved line in a black area which appears to have a decisive luminosity as opposed to the calculated gravity of the black line in a cut-away area.

In making a multiple colour print we become immersed in a more complex, contrapuntal scheme of things. Each colour impression retains its independence and yet all coalesce to form a whole.

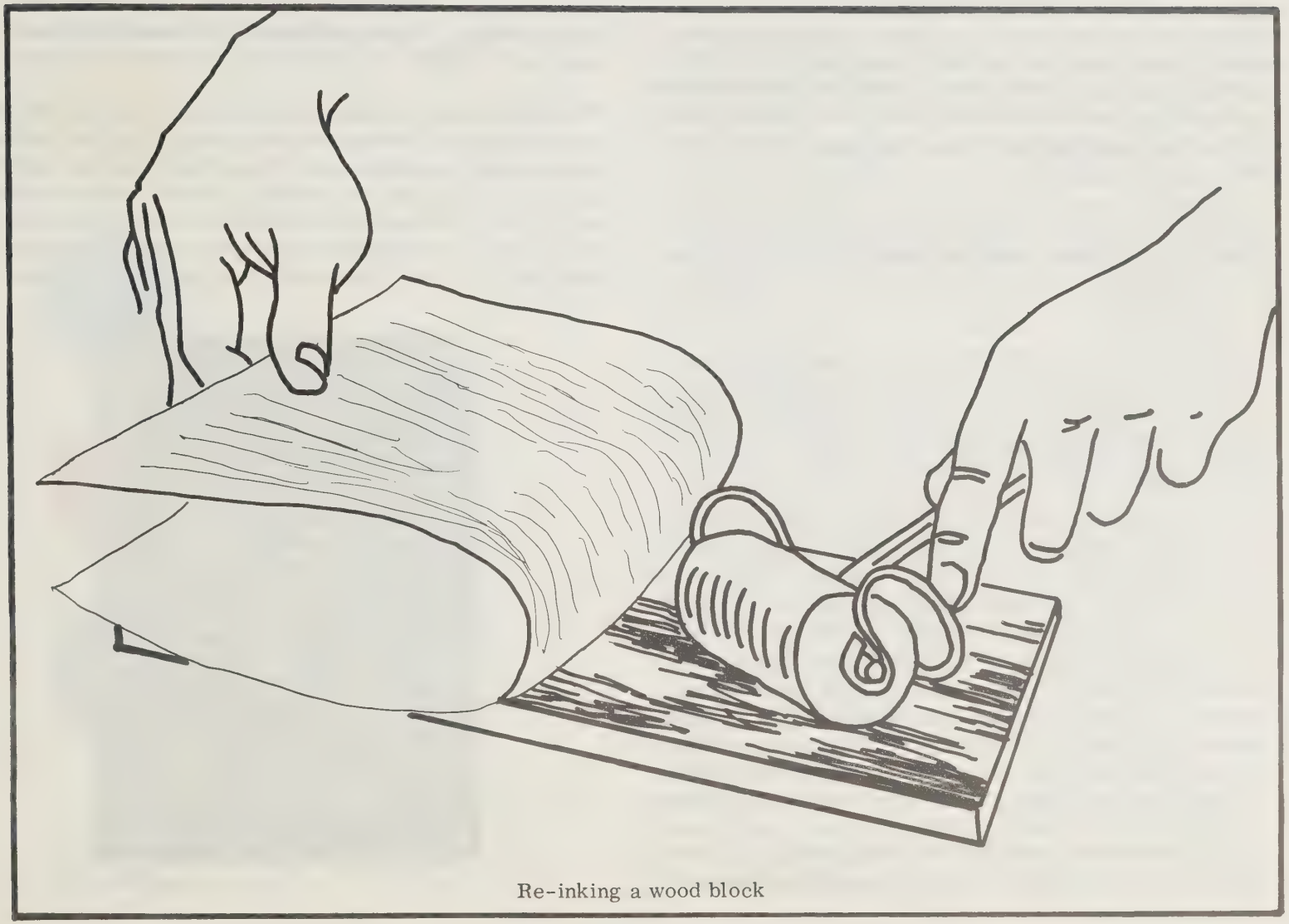
A final point about texture. The print will show the natural texture of the particular piece of printing material as well as the texture applied to it by various means such as scratching the surface, hammering nail holes or wire mesh impressions. Some artists in wood block printing also make use of collage. The only justification for our actions is the end result.

PROCEDURE

Having then arrived at a composition, perhaps on paper, we can transfer our design onto the wood either by tracing or freely copying. Remember that printing reverses the original design. If the artist wishes to avoid reversing his composition he can trace from the back to reverse the design onto the wood. It is possible at times to do a reverse tracing of the lettering in a design without being concerned about the rest of the design. By using a soft pencil on the tracing paper it should be possible to rub the lines onto the wood with a fingernail or some hard object. Sometimes the drawing need only be briefly traced and the details then freely copied.

Many schools, particularly in the Orient, paste the drawing onto the wood and then cut right through it. If the paper is stuck face downward, some oil rubbed on the back will make the paper transparent allowing the design to shine through, particularly if done with black watercolour ink.

A good method for an experienced woodcut artist is to work spontaneously on the wood with brush and ink once he has arrived at an idea. Using brush and ink (Chinese or India), on the wood one can, to a great degree, simulate the ultimate design. This allows the artist to assess his work before cutting. It also allows him to capitalize on interesting effects produced by a free use of the brush. Quite a meaningful relationship can be established between the brush and knife. A good, pointed watercolour brush should be used; a Chinese brush is ideal. Corrections or additions such as white lines can be done with chalk. With experience, one can even work quite spontaneously in making final decisions with the knife or gouge. Some artists begin by painting the block with black ink and then develop the composition in white chalk.



Re-inking a wood block

The next step is to cut the block, handling the tools in the manner already described. As before, the parts of the wood to be cut away are the white, untouched parts of the surface remaining after the composition has been inked in; that is to say, the parts that will not print onto the paper. In the case of a black and white print, these are the white parts of the composition.

Having more or less finished the cutting of the wood block, it can then be lightly sanded and inked and a proof pulled. It is then possible to decide whether any further cutting should be done.

In the event that an area has been removed by mistake, one should avoid trying to fill up the area; it will only cause an obvious blemish in the print. However, if a piece of the surface breaks off cleanly, the piece can be glued back on without causing any trouble.

The inking of the woodcut has already been described. Be sure the block has been thoroughly inked but at the same time avoid over-inking, or delicate lines may be lost and printed surfaces will have a rather unpleasant heaviness to them. With the rubbing method of printing, it will nearly always be necessary to add further ink before the print is completed. This is accomplished by lifting half the print at a time and rolling on more ink. The quality to aim at is a good solid inked impression, particularly when black is being used. However, a few white specks on the paper can sometimes give added richness to the print.

It is for the student to decide how many prints of a given woodcut he or she should make. When using a press, of course, one is encouraged to do more copies than when hand rubbing. Fifteen prints could be considered as a reasonable edition, but this is a hypothetical suggestion.

The prints should be numbered and signed in pencil directly under the print. On the left-hand side, the number of the print should be written down, the prints being numbered consecutively as they are printed. After the number, make an oblique stroke and then write the number of the complete edition. On the right-hand side of the print sign your name and the date. Remember that this should be done in pencil.

Colours used in subtractive diagram in order of application

COLOUR WOODCUTS

Although much of the significant woodcut printing in Europe and America has been black and white, colour has been used extensively, in many ways, particularly in Japan.

One means of multiple colour printing is termed "the subtractive method". In this, only one block is used and the printing is done in stages working from a light colour in the first stage through to progressively darker stages. One could, on the other hand, work with opaque inks to create lighter areas over darks already printed.

The white areas in the composition are traced and cut first, working from a colour cartoon. The block is then printed in the first colour. Be sure enough prints are made to allow for accidents and errors before working into the next stage. The first colour would then be cut away and the second colour printed. This procedure would go on until all the colours had been printed. The principle in this method, of course, is that each new colour is printed inside the previously printed area, so that the colour is never affected by a variable ground as is the case with multiple block printing (a separate block for each colour) where one colour may overlap several others.

With multiple colour blocks it is necessary to create a cartoon in which each colour is designated. This can be done with a transparent medium like watercolour so that one is aware of the effect of each transparent colour being overprinted on other colours. The next step is to trace the design for each colour onto a separate wood block. After cutting, print each colour consecutively. Registration is the next problem to be concerned with when one is printing with several colour impressions.

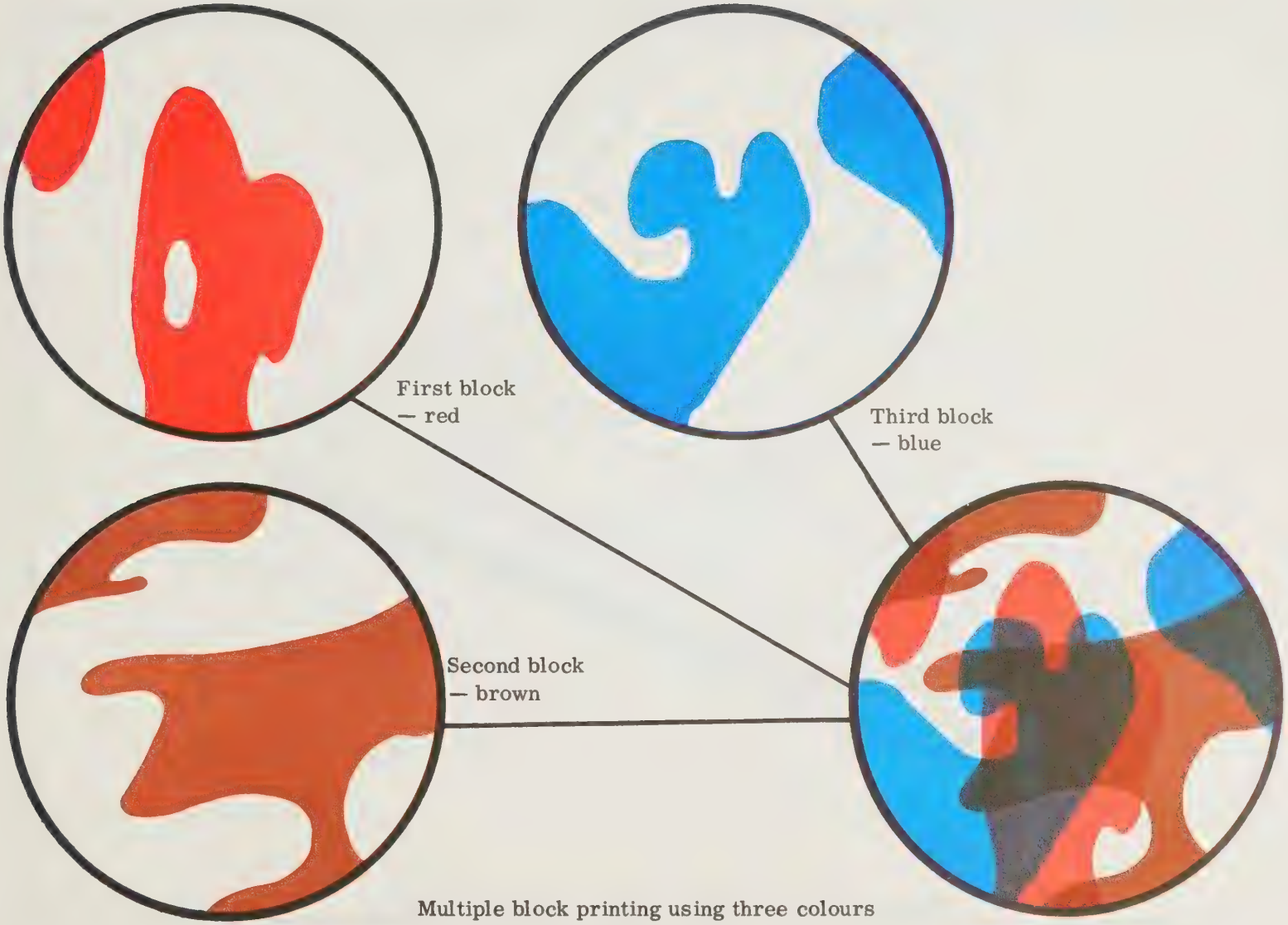
Subtractive principle of colour printing

First colour

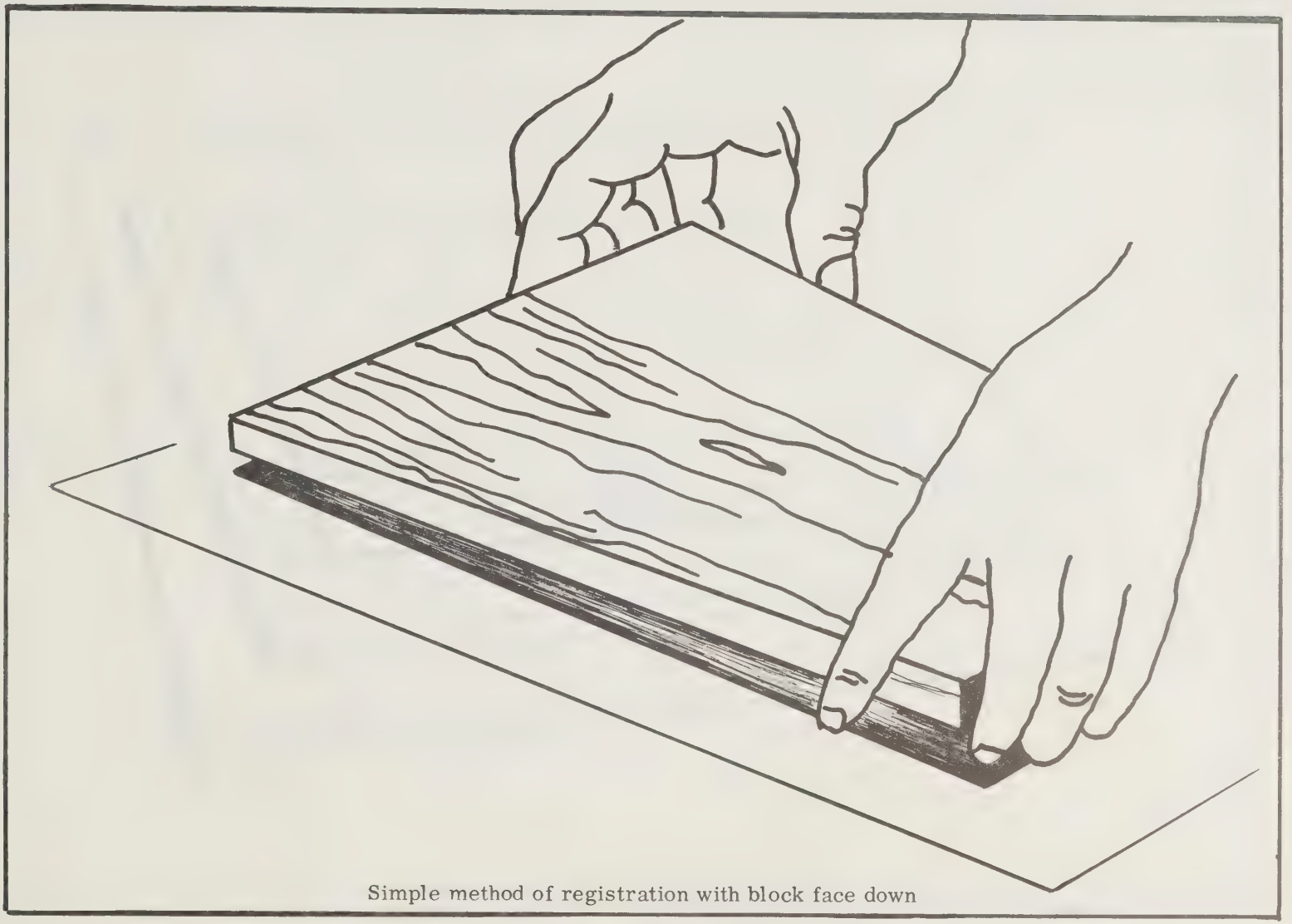
Second colour

Third colour

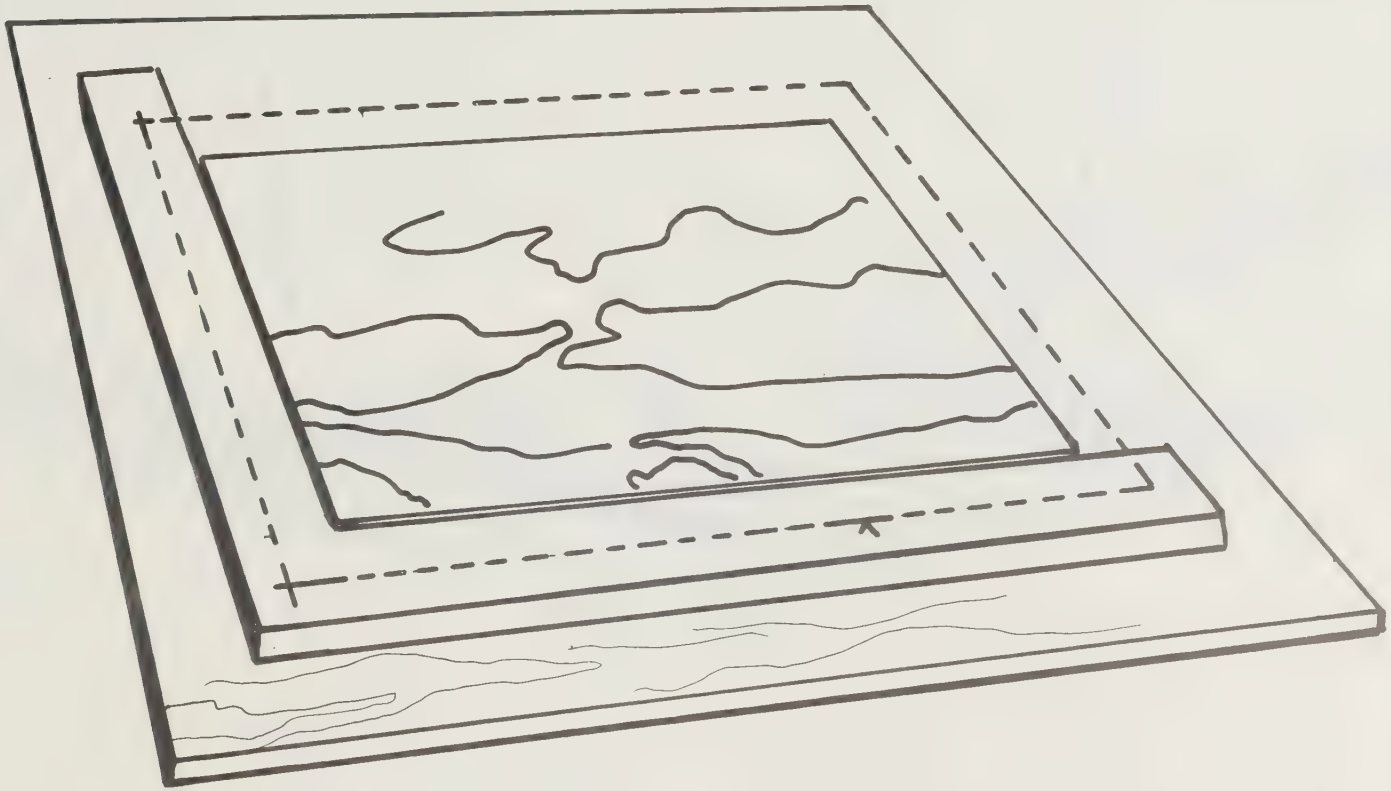
Fourth colour



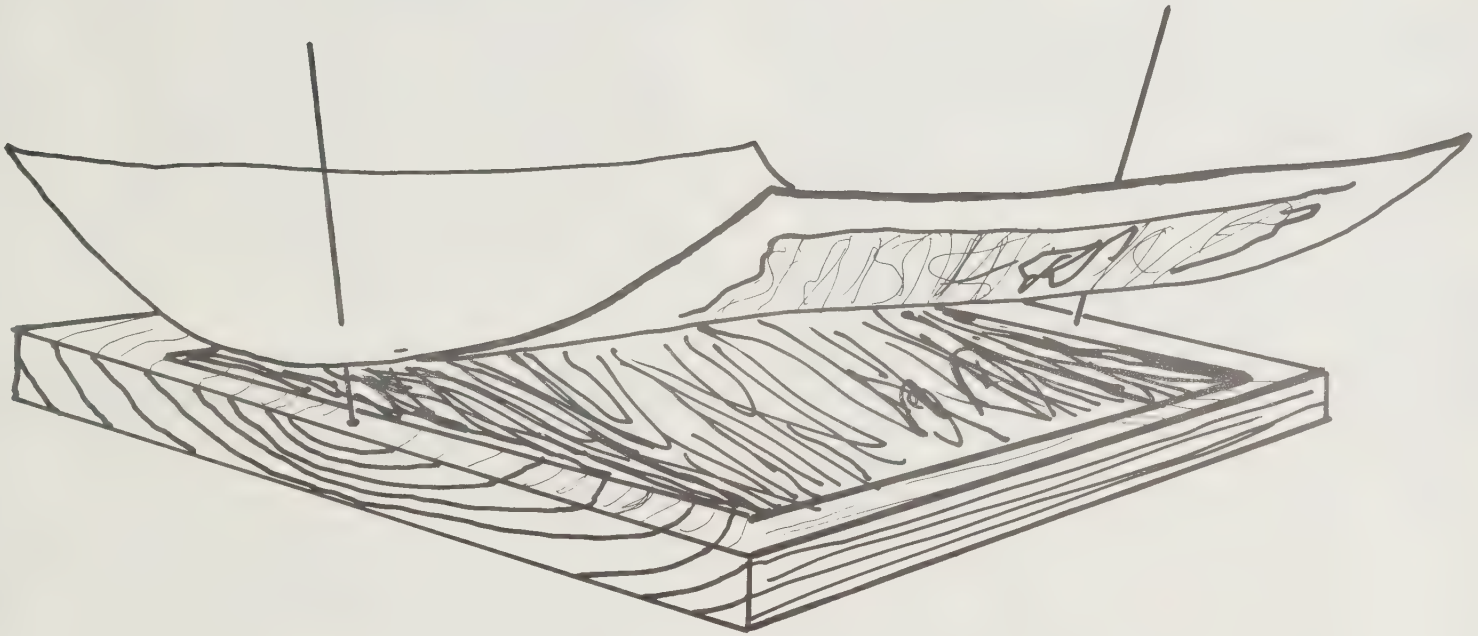
Multiple block printing using three colours



Simple method of registration with block face down



Registration base with woodcut in place



Registration by pin method

REGISTRATION

For a simple method of registration: after the first impression has been printed place the print face upwards on the work table. Having inked the next block, simply place it face downwards on the print, with the corners in register. The combined block and print can then be slid to the edge of the table and, while held firmly, turned over into the position for printing. With this method it is important that the first colour block have at least two corners or sides that make printed impressions on the paper. If this does not occur, some pencil marks around the edge will do.

Another method of registration is to use a baseboard on which a right-angled wooden stop has been fixed. It is best to make the base and stop fairly long in each dimension to allow for large prints. The stop section can be made about two inches in width and about the same thickness as the woodcuts. It should be arranged so that the woodcut is slightly higher than the stop so as not to impede printing. This may mean using some packing if a thin wood block has to be printed. Final adjustment of the packing can be done with sheets of cardboard or paper. It is important that your wood block is slightly higher than the stop if you are using a press. A high stop would interfere with the pressure of the platen on the print. (Another alternative is to keep the stop unattached to the base so that it can be removed before the printing is carried out.)

Each successive wood block is fitted snugly into the right-angled stop. The paper can be lined up with the outside of the stop, or pencil marks can be made on top of the stop by which the paper can be registered. It will be necessary that two sides of the paper be squared off to register with the stop.

Another variation of this method is to tape the print to one side of the stop so that the print can be folded back and each new colour block put in place for printing successively before moving on to the next print. This means printing new colours without drying the previous one (wet into wet) and can produce interesting results.

There is still another way of registering. Make two tiny holes at the ends of each block, making sure they are in identical positions on each specific block. When the first colour is being printed, pierce each paper with two pins related to the holes. With each succeeding colour block it is simply a matter of placing the pins in the holes in the print and then locating the holes in the block, at which point the print can be lowered onto the block. To avoid having the holes inside the actual print, it is possible to leave a narrow border around the wood block. This border can be cut back with the gouges leaving the composition itself in high relief. The holes can then be inserted in the border. Compared with the other, this method tends to be rather laborious.

There are other variations of the basic colour techniques. One modification of the multiple block system is to establish a key design using a strong dominant colour. Having pulled a proof of the woodcut, one is then able to compose the ancillary colours. This may be only one further colour

or several colours. They can be worked out on the proof with watercolours or pastels. It may be necessary to do two or three proofs so that two or three ideas may be tried out. Let the proofs dry out overnight.

Having worked out a successful colour arrangement, it is then possible to trace your colours onto additional wood blocks. These can then be cut and printed and proofs of the complete composition pulled.

At this stage, one becomes aware of the importance of proof printing in working up to the final stage of printing the edition. Printing proofs is an essential part of the creative process of printmaking. Many kinds of colour combinations can be tried out before the final proof is established and the edition started.

One important factor is the order in which the various colours are printed. The orthodox method of printing is to print the light colour first and work down to the darkest. However, this is only a rule and should be broken when it no longer serves the particular motive of the creative printer.

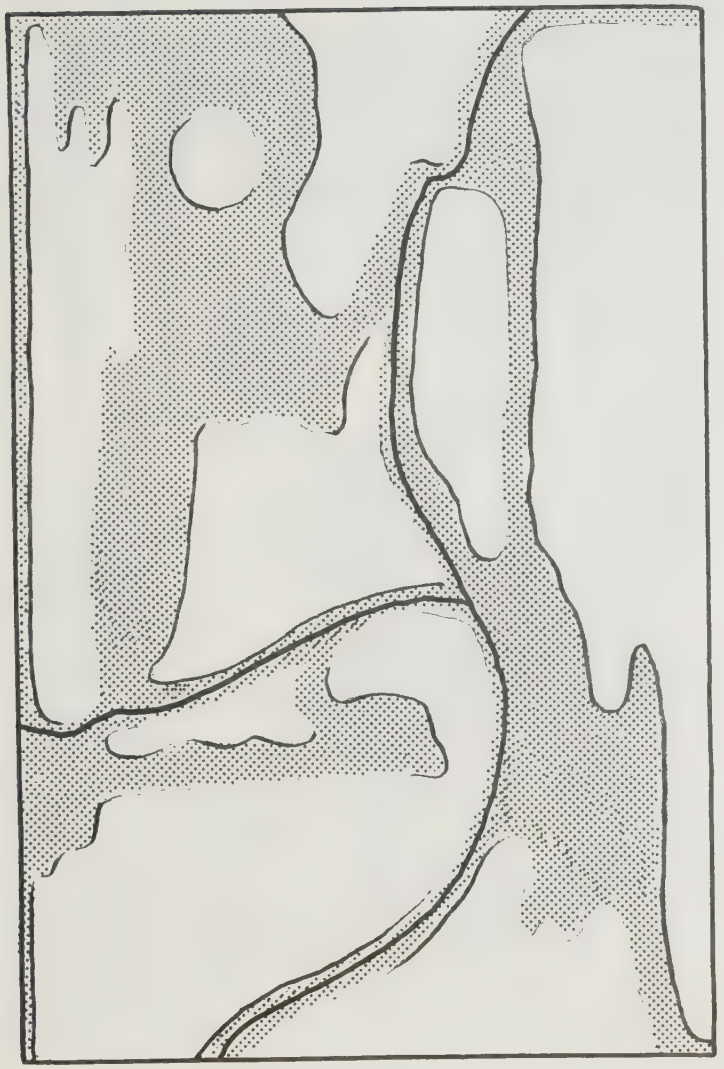
Some very good qualities can be arrived at sometimes by printing a light semi-transparent colour over a dark one, creating lovely muted effects. At times, an opaque colour can also be printed over darker areas with very good effects. By adding opaque white ink to the colour, great opacity can be created; by mixing transparent white with your colour, the colour is tinted and yet is increased in transparency. Some colours are naturally more opaque than others. Earth colours and cadmiums tend to have great opacity whereas such colours as alizarin red and Prussian blue are very transparent.

Another point to consider is that a block that one had first intended as a dark or a strong colour can be tried as a light or subtle colour and vice versa.

An interesting factor to make note of is the ability of most papers to absorb the initial inks so much that they dry matte; as further colours are printed over, they tend to become semi-glossy. This is an interesting characteristic to take into account.

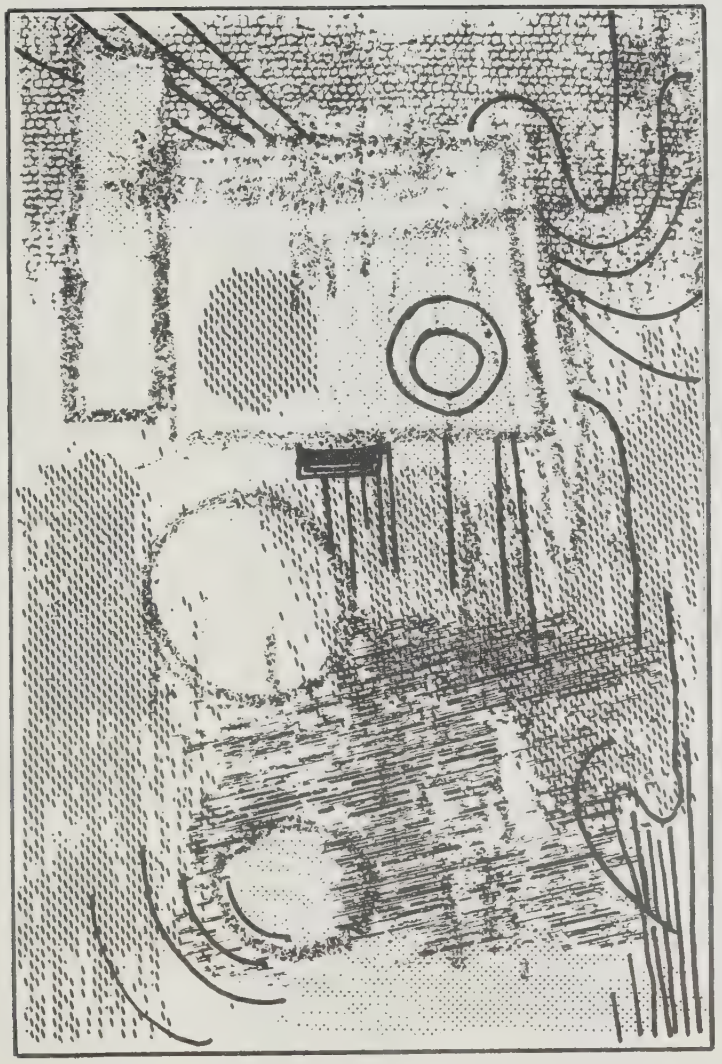
For another colour technique, there is the case of a composition that lends itself to colour division. Each part of the composition has a localized colour. The block, having been engraved, is cut into several pieces related to the design using band-saw or fret-saw. Each piece can then be inked with its respective colour. The pieces are then placed together and printed.

There is also the method of inking a surface with variable colour by applying the ink with brushes, rags and small rollers. Care must be taken not to deposit heavy impastos where delicate lines and textures are. This method lends itself to broad, simple shapes; some lino-cuts fall into this category. The texture created by the brush strokes and rags may be interesting, and the artist should capitalize on this and exploit it to the full.



Block separated into sections

Colour applied to sections



A collage relief

In printing a collage relief, shapes are actually cut out of various materials and organized on a surface as it were. These shapes may be either stuck down or loosely applied on a surface with pencil marks to register them. The different shapes are then inked with brushes, small rollers, etc., using variegated colours. This type of printing can be given great textural variation by the type of materials used; such things as burlap, textured papers, string, and so on.

Graduated use of colour can be quite effective. For instance, two colours are placed on the slab and with the palette knife the colours are formed into a continuous string of graduated colour, a different colour at each end and a transition in between. The roller is then applied across the colour, working in one direction continuously so that the graduation is transferred to the roller. The woodcut is then rolled up with this, again working in one direction. Some very delightful effects can be obtained with colour transition from a very dark to a light tint; or a chromatic change, perhaps from green to red.

It is also possible to combine some of these ideas into various composite arrangements. A complete plank, used to print with graduated colour, as an initial impression and then followed by an engraved block, inked with a dark colour or black is one concept.

A weathered board can be used to print a light tint as a textured statement, preparatory to printing the main woodcut.

Another interesting method is to combine woodcut with monotype printing. Place a piece of glass over the finished

wood block. Apply coloured ink or paint on the glass using the woodcut as a guide; put on the colours with brushes, rags, etc., exploiting all manner of textures. Place the paper on top of the glass and rub off a print; do further painting and again rub off a print and repeat this procedure until there is a satisfactory number of prints. These are called monotypes because there is no strict printing technique involved, and it does not produce identical copies. Each impression depends on the free arrangement of colour on an undefined surface.

When the monotypes are dry to the touch, the wood block can then be printed over. It may be interesting to try printing onto the wet monotypes; this may seem unorthodox, but as mentioned before, the end result is more important than strict adherence to rules.

The usual procedure is to wait until an impression is dry to the touch which may mean overnight drying. However, printing wet into wet can sometimes produce interesting results.

A word should be said about colouring or tinting the finished prints with watercolours. Many of the traditional American prints were coloured this way. Some Japanese artists work in this way, and they also have a technique of colouring the back of a print on rice paper. The effect is one of beautifully muted colour.

THE EDITION

Once a working proof has been created and the artist is satisfied, the next step is to print the edition. All copies in the edition should be identical with the working proof, although slight fluctuations in quality do occur. The most interesting factor in hand printing done by the artist is that there is always a slight degree of inconsistency, perhaps a slight variation in colour intensity or in ink quantity. This is the advantage over the mechanical consistency of commercial printing.

The prints must be signed and numbered as described in an earlier paragraph. Prints selected for exhibition or sale can then be matted. White or tinted matt-board can be used and with the steel rule and heavy duty matt-knife a frame can be cut.

The aperture in the mat should be large enough to allow for a small gap between the edge of the actual print and the edge of the mat; this also allows the pencilled information to show at the bottom of the print. The width of the mat is something that should be left to the discretion of the artist and it has a lot to do with the size of the print.

Prints may also be glazed and framed ultimately. For exhibition purposes this is ideal. It enhances the print and protects it to some degree.

Woodcut
by Bert Wreford

The material for this booklet
has been prepared
for Youth and Recreation Branch
by Bert Wreford

APPENDIX

We have discussed briefly all the experimental techniques, along with the basic woodcut methods. It is experimentation with all the ideas and materials that the imagination can grasp that is most exciting and satisfying. Such things as collage relief provide endless possibilities; and repeat designs with a small lino or woodcut on paper or fabric produces decorative material for many purposes.

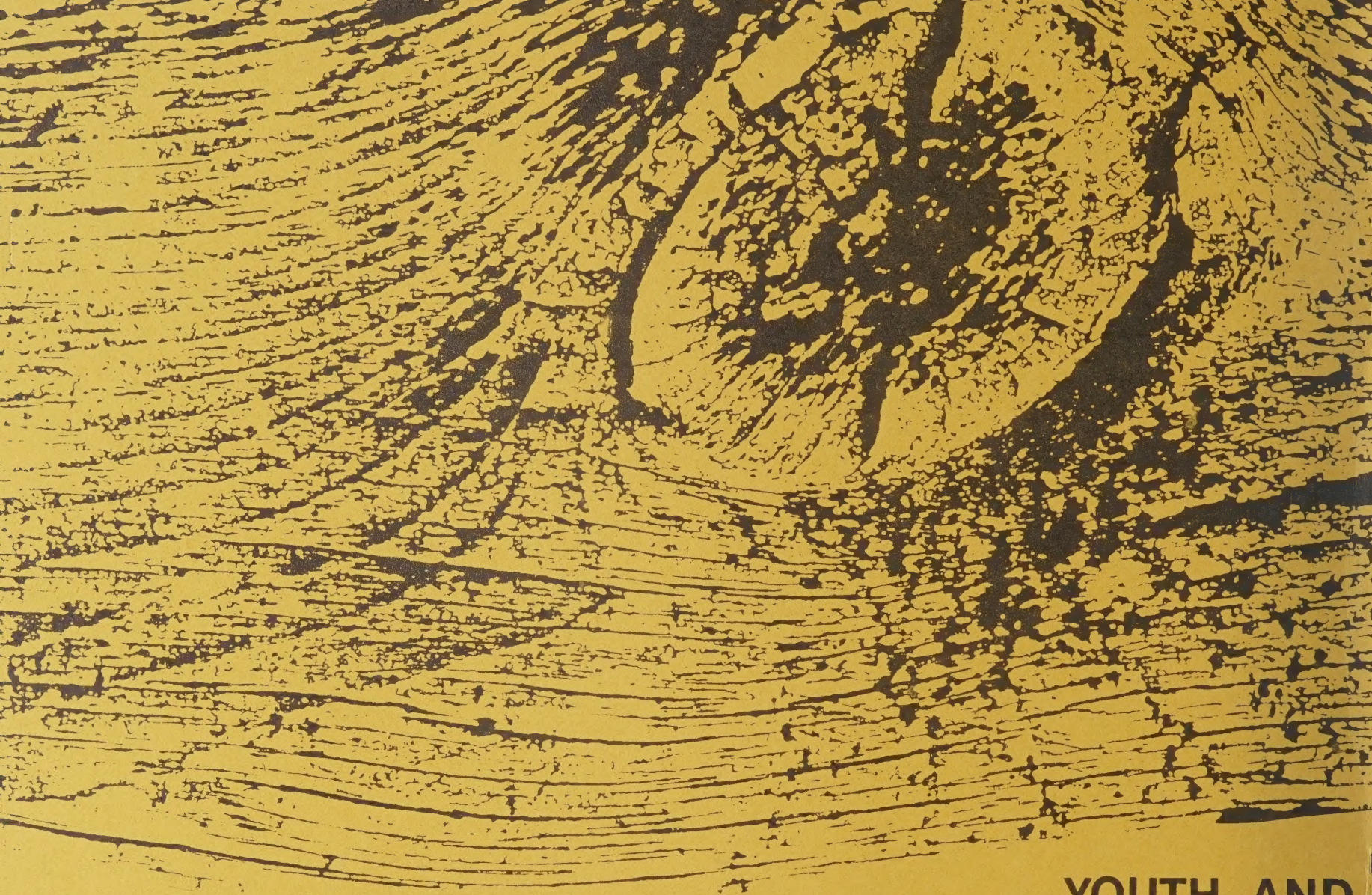
Many ordinary flat–shaped objects that have a relief texture can be inked with a roller and then placed face down on paper. With a clean roller, press the back of the object and then lift it off. Any flat, pliable material can be used such as embossed wallpaper, leather, leaves, canvas, and so on.

There is also the offset print. An object with an interesting relief design or texture can be inked with a roller. With a clean, smooth roller, pass it steadily over the inked material, once only. Then rotate the roller firmly over a sheet of paper leaving a clean, printed impression.

These ideas can be integrated into some very interesting compositions using repeats and various colour arrangements.

All the various materials that the printer will need have been listed and described. However, it is possible to produce work with quite limited means. Many of the pieces of equipment can be improvised, if necessary.

In conclusion, it only remains to say that the only meaningful knowledge is that acquired by the experience of doing and the more experience acquired, the greater the understanding.



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